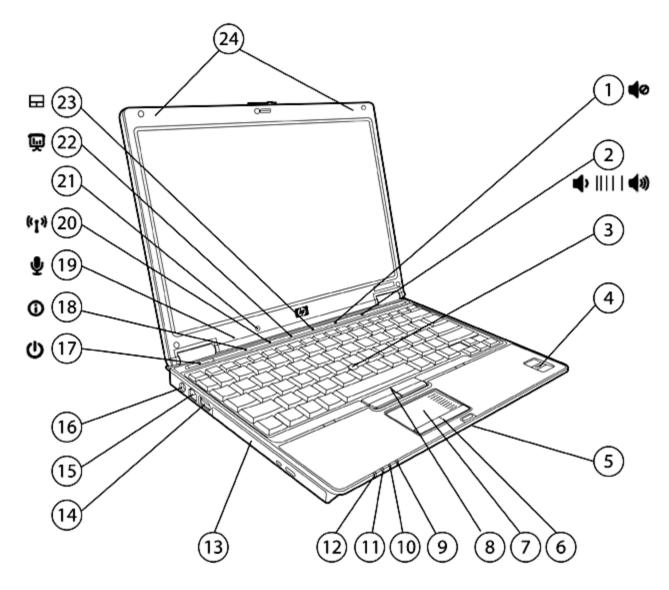Overview

HP recommends
Windows Vista® Business
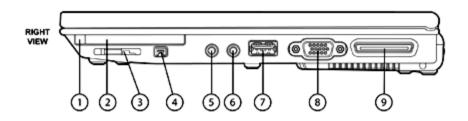

1. Volume mute button with LED indicator
2. Volume scroll zone with up/down LED indicators
3. Pointstick
4. HP Fingerprint Sensor
5. Speaker
6. Touchpad buttons
7. Touchpad with scroll zone
8. Pointstick buttons
9. Hard drive / optical drive activity / HP 3D DriveGuard LED
10. Battery charging LED
11. Power/standby LED
12. Wireless on/off LED

13. Optical drive (select models)
14. USB 2.0 Port (powered on select models)
15. RJ-11/modem port
16. Power connector
17. Power button with LED
18. HP Info / HP QuickLook button with LED indicator
19. Integrated microphone
20. Wireless on/off button with LED indicator
21. Ambient Light Sensor

22. HP Presentation button with LED indicator
23. Touchpad on/off button
24. Two WLAN/WWAN combo antennas

Overview

1. PC Card eject button
2. PC Card slot (or smart card reader on select models)
3. Secure Digital (SD) slot
4. IEEE 1394 port
5. Stereo headphone/line out

6. Stereo microphone in
7. USB 2.0 port
8. VGA/external monitor connector
9. Docking connector
10. Kensington Lock slot
11. RJ-45/Ethernet port

At A Glance

- Genuine Windows Vista Business*,
  Genuine Windows Vista Home Basic,
  Genuine Windows XP Professional, or
  FreeDOS
- Starting at 2.8 lb/1.29 kg and less than 1 inch thin
- Integrated optical drive support on select models
- Flexible wireless connectivity options:
  - Integrated HP ev2210 1xEVDO-A or HP hs2300 HSDPA Broadband Wireless module
  - Integrated 802.11 a/b/g/draft-n, a/b/g, or b/g wireless LAN module
  - Bluetooth®
- 12.1-inch Illumi-LiteWXGA display with Ambient Light Sensor and HP Privacy Filter support
- 3-, 6-, and 9-cell battery options
- Intel® Centrino® Pro processor technology capable, with Intel Core™2 Duo ULV processors
- Full magnesium alloy enclosure, magnesium alloy support structure, and HP DuraFinish
- Enhanced security features including HP Fingerprint Sensor, TPM 1.2**, optional Smart Card Reader, and Drive Encryption for HP ProtectTools
- HP QuickLook on Windows Vista models for instant access to email, calendar, and contact information
- Up to 100-GB 4200 rpm, user-removable hard drive protected by HP 3D DriveGuard or 64-GB Solid State Drive
- Up to 2 GB of 667-MHz DDR2 SDRAM (runs at 533-MHz); one memory slot
- Full-size keyboard with HP DuraKeys
- Touch-sensitive controls
- Dual pointing devices (touchpad with scroll zone and pointstick)
- Connector for HP 2400/2500 Ultra-Light Docking Station
- Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
- Secure Digital (SD) slot

* At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted.
** TPM module disabled where use is restricted by law; for example, Russia and China.

QuickSpecs

Standard Features

Processors	Intel Core 2 Duo ULV Processor U7500 (1.06-GHz, 533-MHz, 2-MB L2 cache)	
	Intel Core 2 Duo ULV Processor U7600 (1.20-GHz, 533-MHz, 2-MB L2 cache)	

Operating System	Preinstalled	Genuine Windows Vista Business†*
		Genuine Windows Vista Home Basic*
		Genuine Windows XP Professional
		FreeDOS
	Supported	Genuine Windows Vista Enterprise*
		Genuine Windows 2000
	Certified	SuSE Linux Enterprise Desktop 10

† At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted.

* Certain Windows Vista product features require advanced or additional hardware. See http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit http://www.windowsvista.com/upgradeadvisor.

Chipset	Mobile Intel GM965

Intel Centrino Pro processor technology capable	Intel Centrino Pro processor technology is a selectable feature that is available on units configured with an Intel Wireless WiFi Link 4965AGN or 4965AG. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel Active Management Technology (AMT) offers built-in manageability and proactive security for networked notebook PCs, even when they are powered off* or when the operating system is inoperable. It can help identify threats before they reach the operating system, isolate infected systems, and update PCs regardless of their power state.
	*Requires a Windows operating system, network hardware and software, connection with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.
	NOTE: Some functionality of Intel Centrino Pro, such as Intel AMT and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Centrino Pro processor technology is dependant on 3rd party software providers. Compatibility of this generation of Centrino Pro technology-based hardware with future "virtual appliances" and Microsoft Windows Vista operating system is to be determined.

Graphics	Mobile Intel GMA X3100, up to 384 MB of shared system memory
	Microsoft DirectX9 capable

Display	Internal	12.1-inch diagonal Illumi-Lite WXGA anti-glare (1280 × 800 resolution)
		Ambient light sensor
		HP Privacy Filter support
	External	Up to 32-bit per pixel color depth
		VGA port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz
		NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

Standard Features

Memory	Standard	512-MB, 1024-MB, or 2048-MB 667-MHz* DDR2 SDRAM; one SODIMM slot

* Operates at a maximum of 533-MHz with 667-MHz memory.

NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Communications	Integrated Intel Gigabit Network Connection (10/100/1000 NIC)* 56K V.92 modem**

* The term "10/100/1000" or "Gigabit" Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

** Designed for downloads from 56K modem compliant sources. Maximum achievable download transmission rates currently do not reach 56 KB/s, and will vary with line conditions. Modem availability is subject to country regulatory approval.

Wireless Devices	Support for a broad range of secure, integrated wireless LAN and wireless WAN options featuring support for the latest industry standards. Wireless LAN is factory configurable or available as an option to be added later. Broadband Wireless (WWAN) requires Windows Vista Business or Windows XP Professional and is available in select countries as a standard, factory configurable feature or as an option to be added later. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN and wireless WAN options.
HP ev2210 1xEVDO-A Broadband Wireless Module	Integrated WWAN module connects to the Verizon Wireless BroadbandAccess and NationalAccess networks (US only) Supports CDMA 1xEVDO-A, 1xRTT connections at 800 and 1900 MHz. NOTE: Separately purchased Verizon Wireless service is required. For details, go to http://www.hp.com/go/broadbandwireless. Upgradeable design and two 850/900/1800/1900/2100-MHz antennas integrated in the top of the display panel support current and future WWAN technologies
HP hs2300 HSDPA Broadband Wireless Module	Integrated WWAN module that provides connection to GSM, GPRS, EDGE, UMTS, and HSDPA mobile networks in many countries. Currently supported networks are the Cingular network in the U.S., Vodafone networks in select countries, and roaming on Cingular and Vodafone partner networks in more than 100 countries. NOTE: Separately purchased mobile network operator service is required. Upgradeable design and two 850/900/1800/1900/2100-MHz antennas integrated in the top of the display panel support current and future WWAN technologies.
All 802.11a/b/g integrated wireless LAN options	Wi-Fi certified Cisco Compatible Extensions support (Version 4.0) with Microsoft Windows XP Wired Equivalent Privacy (WEP) support up to 128-bit keys Wi-Fi Protected Access (WPA) and WPA2 support 802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP Advanced Encryption Standard (AES) support WiFi certified for WPA2, WMM Three antennas integrated in the display enclosure

Standard Features

	Intel Wireless WiFi Link 4965ABGN	Integrated support for 802.11a, b, g, and draft-n Up to 300-mbps data rate
	Intel Wireless WiFi Link 4965ABG	Integrated support for 802.11 a, b and g Up to 54-mbps data rate
	Intel PRO/Wireless 3945BG Network Connection	Integrated support for 802.11 b and g Up to 54-mbps data rate
	Broadcom 4321AGN 802.11a/b/g/draft-n Wi-Fi Adapter	Integrated support for 802.11a, b, g, and draft-n Up to 300-mbps data rate
	Broadcom 4311AG 802.11a/b/g WiFi Adapter	Integrated support for 802.11 a, b and g Up to 54-mbps data rate
	Broadcom 4311BG 802.11b/g WiFi Adapter	Integrated support for 802.11 b and g Up to 54-mbps data rate
	HP Integrated Module with Bluetooth Wireless Technology	Bluetooth Specification v2.0 compliant Works with a wide range of Bluetooth devices

Keyboard	The 101/102-key compatible keyboard features an industry standard, full-pitch key layout with desktop keyboard features, such as the isolated inverted-T cursor control keys, editing keys, both left and right control and alt keys, and 12 function keys. US and International key layouts are available. Other features include an integrated numeric keypad, hotkeys for instant access to power conservation, brightness, and other features, 19-mm x 19-mm key pitch (center-to-center spacing), 2.0-mm stroke, and comfort-dished keycaps. HP DuraKeys is a clear coating applied over the notebook keyboard that helps protect the finish and the printed characters on the keys. HP DuraFinish helps protect the finish on the keyboard deck, graphics, and icons from normal wear and tear.

Touch-sensitive controls	Touch-sensitive controls provide easy access to the following features: HP Info Center, HP QuickLook, wireless on/off, HP Presentation button, touchpad on/off, volume up, volume down, and mute

Pointing device	Enhanced dual pointing devices: Touchpad with scroll zone, two pick buttons and Pointstick, two pick buttons

Expansion card slots	1 Type I/II PC Card slot	Supports 32-bit CardBus and 16-bit PC Cards
	or	
	Optional Integrated Smart Card Reader (replaces PC Card slot)	Compatible with ISO 7816 compliant Smart Cards PC/SC interface support
	Secure Digital slot	Supports SD (Secure Digital), MMC (MultiMedia Card)

Standard Features

Storage	Primary Storage Device	60/80/100-GB 4200 rpm 1.8" PATA Hard Drive 64-GB Solid State Drive

NOTE: Hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 10 GB is reserved for the system recovery software.

	HP 3D DriveGuard	The hard drive is mounted to the notebook frame, reducing the transmission of shock away from the hard drive. Uses three-axis digital motion detection with intelligent sensitivity to help protect the hard drive during normal use from shock and vibration. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected.
	Optical drives (9.5mm PATA)	DVD-ROM Drive DVD/CD-RW Combo Drive DVD+/-RW SuperMulti DL Drive

Interfaces	PC Card slot	One Type I/II PC Card slot
	Smart Card Reader	Optional (replaces PC Card slot)
	External monitor	One – VGA
	1394a	One
	Stereo microphone in	One
	Stereo headphone/line out	One
	Power connector	One
	RJ-11/modem	One
	RJ-45/Ethernet	One
	USB 2.0	Two (including one powered USB 2.0 port to support HP External MultiBay II on units without an integrated optical drive)
	Docking connector	For HP 2400/2500 Ultra-Light Docking Station
	LED status indicators	Seventeen

Audio	High Definition Audio support w/24-bit DAC Integrated mono speaker Integrated microphone Touch-sensitive controls for volume up, volume down, and mute Stereo headphone/line out Stereo microphone in

Standard Features

| Software | Preinstalled software with Windows Vista or Windows XP | PDF Complete
HP Backup and Recovery Manager
HP Help and Support Center
HP QuickLook (Windows Vista only)
HP OpenView Radia Management Agent
HP Universal Print Driver
HP ProtectTools Security Manager:
　　　BIOS Configuration for HP ProtectTools
　　　Credential Manager for HP ProtectTools
　　　Device Access Manager for HP ProtectTools
　　　Drive Encryption for HP ProtectTools
　　　Embedded Security for HP ProtectTools
HP Quick Launch Buttons
HP Wireless Assistant
Microsoft Office Ready with 60-day Office Professional 2007 Trial Edition (select models)
Roxio Creator 9 (for optional DVD+/-RW and DVD/CDRW drives)
Symantec Norton Internet Security with complimentary 60-day live update
Intervideo WinDVD – DVD Player |
| | Additional software available from the web | HP Client Manager
Java Card Security for HP ProtectTools |

| HP Backup and Recovery Manager | Each unit is shipped with HP Backup and Recovery Manager. HP Backup and Recovery Manager can provide data and system file protection for HP business PCs to enable fast recovery if the system becomes corrupted or if important information is accidentally deleted. HP Backup and Recovery Manager can perform scheduled or manual backups of the entire drive or individual files and folders. Up to 10 GB of the hard drive is reserved for the system recovery software. HP Backup and Recovery Manager can also create software recovery CDs or DVDs (requires optional CD-RW or DVD+/-RW hardware). |

| SMBIOS Version 2.4 | System Management BIOS, previously known as DMI BIOS, is used to store system management information. |

| HP ProtectTools Security Manager | HP ProtectTools Security Manager is the security platform for business notebooks and desktops. The HP ProtectTools Security Manager is an extensible client security console that delivers enhanced security capabilities through add-on software modules. Modules currently available are: |

- BIOS Configuration for HP ProtectTools
- Credential Manager for HP ProtectTools
- Device Access Manager for HP ProtectTools
- Drive Encryption for HP ProtectTools
- Embedded Security for HP ProtectTools
- Java Card Security for HP ProtectTools

Standard Features

Security	Standard Features	HP ProtectTools Security Manager
		HP Fingerprint Sensor
		Configuration Control Hardware
		Memory Change Alert
		Ownership Tag
		Setup Password
		Power-On Password
		TPM 1.2 Embedded Security Chip*
		TPM Enhanced DriveLock*
		HP Disk Sanitizer
		HP 3D DriveGuard
		Kensington Lock Slot
		Support for Computrace / LoJack for Laptops (must be purchased separately)

	Optional Features	Smart Card Reader (replaces Type I/II PC Card slot)	Compatible with ISO 7816 compliant Smart Cards PC/SC interface support
		HP Privacy Filter	Narrows viewing area so that screen data is visible only to persons directly in front of the monitor

*TPM module disabled where use is restricted by law; for example, Russia and China.
For more information on HP security solutions refer to http://www.hp.com/go/security.

Power Supply	External 65-watt Smart AC adapter, 6-foot (1.8-meter) power cord included. Total length including external AC adapter is 12 feet (3.66 meter). HP Fast Charge*

*HP Fast Charge recharges your battery up to 90% within 90 minutes when the system is off. Fast Charge Technology does not apply to 9 cell primary batteries.

Battery	Primary Battery	3-cell (28 WHr) high capacity Lithium-Ion
		6-cell (55 WHr) high capacity Lithium-Ion
		9-cell (83 WHr) high capacity Lithium-Ion
	Battery Fuel Gauge LEDs	6-cell high capacity and 9-cell high capacity

Battery Life	3-cell Primary Battery	Up to 4 hours
	6-cell Primary Battery	Up to 8 hours
	9-cell Primary Battery	Up to 12 hours

NOTE: The listed battery life measurements were taken on models running Microsoft Windows XP Professional. Battery life will vary depending on the product configuration, product model, applications loaded on the product, power management settings of the product, and the product features used by the customer. As with all batteries, the maximum capacity of this battery will decrease with time and usage.

System Standby Time	Up to 1 week

Standard Features

Power Conservation	Supports enhanced Intel SpeedStep technology with Intel Core 2 Duo ULV processors (allows Battery Optimized Mode, Maximum Performance Mode, or Automatic mode)
	Intel Display Power Saving technology
	Hibernation
	Standby
	ACPI compliance

Docking (optional)	HP 2400/2500 Ultra-Light Docking Station

Service and Support	HP Services offers limited 3- year, 1-year and 90-day warranty options depending on country; 1-year limited warranty on primary battery. On-site service and warranty upgrades are also available. For HP Care Pack services see http://www.hp.com/go/lookuptool.
	NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp.

Select Model(s)

2510p GM651AW#xxx (may vary based on local regulatory requirements)		
	Processor	Intel Core 2 Duo ULV Processor U7600 (1.20-GHz, 533-MHz, 2-MB L2 cache)
	Intel Centrino Pro processor technology	Enabled
	Operating System	Genuine Windows Vista Business*
	System Memory	1024 MB 667-MHz** DDR2 (1 DIMM)
	Hard Drive	80-GB 4200rpm 1.8" SMART PATA
	Display	12.1-inch diagonal Illumi-Lite WXGA anti-glare
	Graphics	Mobile Intel GMA X3100
	Audio	ADI High Definition CODEC Stereo headphone/line out and microphone in Integrated microphone
	Optical Drive	DVD+/-RW SuperMulti DL Drive
	Communications	Integrated Intel Gigabit Network Connection (10/100/1000 NIC) 56K V.92 modem
	Integrated Wireless	Intel Wireless WiFi Link 4965AG
	Integrated Security	Drive Encryption for HP ProtectTools HP Fingerprint Sensor TPM 1.2***
	Pointing Device	Enhanced dual pointing devices (touchpad with scroll zone and pointstick)
	Battery	6-cell (44 WHr) Lithium-Ion
	Power	External 65W adapter
	Warranty	3/3/0

* At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted.
** System runs at a maximum of 533-MHz.
*** TPM module disabled where use is restricted by law; for example, Russia.

QuickSpecs

Options

Memory	HP 512-MB (DDR2 667 MHz) SODIMM	EM993AA
	HP 1-GB (DDR2 667 MHz) SODIMM	EM994AA
	HP 2-GB (DDR2 667 MHz) SODIMM	EM995AA

MultiBay II Storage (9.5-mm)	HP MultiBay II DVD-ROM Drive	PA849A
NOTE: Requires HP External MultiBay II	HP MultiBay II DVD/CD-RW Combo Drive	PA850A
	HP MultiBay II DVD+/-RW SuperMulti DL Drive	PA851A
	HP 80-GB 5400rpm MultiBay II Hard Drive	PH357A

Other Storage	HP Notebooks USB Diskette Drive	DC361B

Communications	Intel Wireless WiFi Link 4965AGN option kit	RT081AA#xxx
	HP ev2210 1xEVDO-A Broadband Wireless Module (Verizon) (available Sept. 2007)	GM763AA#ABA
	HP ev2210 1xEVDO-A Broadband Wireless Module (Sprint) (available Oct. 2007)	GM764AA#ABA
	HP hs2300 HSDPA Broadband Wireless Module (AT&T) (available Sept. 2007)	GG589AA#ABA
	HP hs2300 HSDPA Broadband Wireless Module (Generic) (available Oct. 2007)	GG590AA#xxx

Expansion Solutions	HP 2400/2500 Ultra-Light Docking Station	EQ773AA#xxx
	HP Standard Monitor Stand	PA507A
	HP Adjustable Notebook Stand	PA508A
	HP External MultiBay II	PA509A#xxx

Power	HP 2-Bay Battery Charging Station (North America only)	DT533A#xxx
	HP 2-Bay Battery Charging Station (rest of world)	EW424AA#xxx
	HP 10-Bay Battery Charging Station (North America only)	DT534A#ABA
	HP HP 2400/2500 Battery Adapter Kit	EH769AA
	HP 65W Smart AC Adapter	ED494AA#xxx
	HP 90W Smart Auto Adapter	ED493AA
	HP 65W AC/Auto/Air Combo Smart Adapter	ED993AA#xxx
	HP 3-Cell Li-Ion Primary Battery	RW556AA
	HP 6-Cell Li-Ion Primary Battery	EH767AA
	HP 9-Cell Li-Ion Primary Battery	EH768AA

Carrying Cases	HP Value Nylon Case	RR314AA
	HP Universal Nylon Case	RR315AA
	HP Executive Leather Case	RR316AA
	HP Deluxe Nylon Backpack	RR317AA
	HP Universal Messenger Bag	GD404AA
	HP Deluxe Roller Case	GD405AA

Options

Security	HP PC Card Smart Card Reader with Java Card	EL347AA
	HP ProtectTools Java Card – 10 units	EL348AA
	HP/Kensington MicroSaver Security Lock	PC766A
	HP Notebook Productivity Bundle	GC832AA

Input/Output Devices	HP USB Keyboard & Mouse Bundle	RC465AA#xxx
	HP USB/PS2 Optical 2-Button Scroll Mouse	DC369A
	HP USB Optical Travel Mouse	RH304AA
	HP USB Optical Travel Mouse	RJ316AA

Memory

667-MHz* DDR2 SDRAM
One DIMM slot
DIMM sizes supported: 512 MB, 1024 MB, 2048 MB

Standard Memory
- 512 MB (512 MB x 1)
- 1024 MB (1024 MB x 1)
- 2048 MB (2048 MB x 1)

Optional Memory Upgrades

Support for up to 2048 MB of memory with the installation of optional DDR2 SDRAM memory kits. Please refer to the Hardware and Software Guide for installation procedures. Memory slot is user-accessible.

HP 512-MB (DDR2 667 MHz) SODIMM*	EM993AA
HP 1024-MB (DDR2 667 MHz) SODIMM*	EM994AA
HP 2048-MB (DDR2 667 MHz) SODIMM*	EM995AA

* System runs at a maximum of 533-MHz.

Storage

Optical Drive Support

Fixed optical drives (95mm PATA)	Quantity Supported	Drive Bay
DVD-ROM Drive	One	Fixed optical drive bay
DVD/CD-RW Combo Drive	One	Fixed optical drive bay
DVD+/-RW SuperMulti DL Drive	One	Fixed optical drive bay

Primary Storage Device

Hard Drives (1.8″ SMART PATA)	Quantity Supported	Drive Bay
60-GB 4200 rpm	One	Dedicated hard drive bay
80-GB 4200 rpm	One	Dedicated hard drive bay
100-GB 4200 rpm	One	Dedicated hard drive bay
Solid State Drive		
64-GB Solid State Drive	One	Dedicated hard drive bay

QuickSpecs

Technical Specifications

System Unit	Dimensions (HxWxD)	0.97 in (at front) x 11.11 in x 8.38 in
		24.7 mm (at front) x 282.3 mm x 212.8 mm
	Weight	Starting from 2.8 lb (1.29 kg)

NOTE: Height varies depending upon where on the notebook the measurement is made. Starting weight includes 3-cell battery, hard drive, 512-MB memory, 802.11 wireless communications module. Weight varies by configuration and components.

	Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	18.5 V
		Average Operating Power	12.5 W
		Max Operating Power	< 65 W
	Temperature	Operating	32° to 95° F (0° to 35° C) (not writing optical)
			41° to 95° F (5° to 35° C) (writing optical)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Relative Humidity	Operating	10% to 90%, non-condensing
		Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
	Shock	Operating	125 G, 2 ms, half-sine
		Non-operating	200 G, 2 ms, half-sine
	Random Vibration	Operating	0.75 grms
		Non-operating	1.50 grms
	Altitude (unpressurized)	Operating	–50 to 10,000 ft (–15.24 to 3,048 m)
		Non-operating	–50 to 40,000 ft (–15.24 to 12,192 m)
	Industry Standard Certifications	UL	Yes
		CSA	Yes
		FCC Compliance	Yes
		ENERGY STAR® 4.0	Yes
		ICES	Yes
		GS	Yes
		Australia / NZ A-Tick Compliance	Yes
		CCC	Yes
		Japan VCCI Compliance	Yes
		MIC	Yes
		BSMI	Yes
		CE Marking Compliance	Yes
		BNCI or BELLIS	Yes
		CIT	Yes
		GOST	Yes
		Saudi Arabian Compliance (ICCP)	Yes
		SABS	Yes
		UKRSERTCOMPUTER	Yes

For accessibility information on HP products, please visit http://www.hp.com/accessibility.

Technical Specifications

HP 65W Smart AC Adapter	Dimensions	4.17 x 1.85 x 1.1 in (10.6 x 4.7 x 2.8 cm)	
	Weight	0.62 lb (280 g)	
	Input	100 to 240 VAC	
		Input Efficiency	83% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.7 A at 90 VAC, 0.85 A at 180 VAC
	Output	Output power 65W	65W
		DC output	18.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)
		Non-operating (storage) temperature	−4° to 149° F (−20° to 65° C)
		Altitude	0 to 10,000 ft (0 to 3,048 m)
		Humidity	20% to 80%
		Storage Humidity	10% to 90%
	EMI and Safety Certifications	CE Mark – full compliance with LVD and EMC directives; Worldwide safety standards – IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals – C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF – over 200,000 hours at 25°C ambient condition.	

9-Cell (83WHr) Lithium-Ion battery	Dimensions (H x W x L)	1.6 x 2.3 x 8.1 in (4.1 x 5.9 x 20.6 cm)	
	Weight	1.07 lb (0.488 kg)	
	Cells/Type	9-cell Lithium-Ion	
	Energy	Watt-hour Capacity	83Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (−10° to 60° C)
		Non-operating	−4° to 140° F (−20° to 60° C)
	Battery Re-Charge Time	System in OFF mode or Standby	3 to 4 hours
		System ON	4 to 5 hours (depending on system power consumption)
	Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery	

QuickSpecs

Technical Specifications

6-Cell (55WHr) Lithium-Ion battery	Dimensions (H x W x L)	0.8 x 2.3 x 8.1 in (2.1 x 5.9 x 20.6 cm)	
	Weight	0.73 lb (0.332 kg)	
	Cells/Type	6-cell Lithium-Ion	
	Energy	Watt-hour Capacity	55Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (–10° to 60° C)
		Non-operating	–4° to 140° F (–20° to 60° C)
	Battery Re-Charge Time	System in OFF Mode or Standby	2.5 hours
		System ON	3 to 5 hours (depending on system power consumption)
		HP Fast Charge	Charges the battery up to 90% within 90 minutes when system is OFF
	Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery	

3-Cell (28WHr) Lithium-on battery	Dimensions (H x W x L)	0.8 x 1.5 x 8.1 in (2.1 x 3.9 x 20.6 cm)	
	Weight	0.39 lb (0.176 kg)	
	Cells/Type	3-cell Lithium-Ion	
	Energy	Watt-hour Capacity	28.8Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (–10° to 60° C)
		Non-operating	–4° to 140° F (–20° to 60° C)
	Battery Re-Charge Time	System in OFF Mode or Standby	2.5 hours
		System ON	3 to 5 hours (depending on system power consumption)
		HP Fast Charge	Charges the battery up to 90% within 90 minutes when system is OFF

12.1-inch Illumi-Lite WXGA anti-glare	Active Area (W x H)	10.3 x 6.4 in (26.1 x 16.3 cm)	
	Diagonal Size	12.1 in (30.7 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	300:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	0.204 mm
		Format	1280 x 800
		Configuration	RGB Stripe
	Backlight	LED	
	PPI	125	
	Viewing Angle	±30° Horizontal, ±10° Vertical (minimum)	

Hard Drives

QuickSpecs

Technical Specifications

100-GB 4200 rpm 1.8" PATA	Drive Weight	0.13 lb (59 g)	
	Capacity	100 GB	
	Height	0.31 in (8 mm)	
	Width	2.12 in (54 mm)	
	Interface	ATA-6	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	15 ms
		Maximum	26 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	195,371,568	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

80-GB 4200 rpm 1.8" PATA	Drive Weight	0.13 lb (59 g)	
	Capacity	80 GB	
	Height	0.31 in (8 mm)	
	Width	2.12 in (54 mm)	
	Interface	ATA-6	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	15 ms
		Maximum	26 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

60-GB 4200 rpm 1.8" PATA	Drive Weight	0.13 lb (59 g)	
	Capacity	60 GB	
	Height	0.31 in (8 mm)	
	Width	2.12 in (54 mm)	
	Interface	ATA-6	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	15ms
		Maximum	26 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	117,210,240	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

Technical Specifications

Optical Drives – Fixed

DVD-ROM Drive	Dimensions	0.37 x 5.51 x 5.04 in (0.95 x 14.0 x 12.8 cm)	
	Weight	0.34 lb (155 g)	
	Access Times	Random	<120 ms CD
			<200 ms DVD
	Max Data Transfer Rate	24X-CD-ROM	3,600 KB/s
		8X-DVD	10,800 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW	
	Supported Media (write)	None	
	Max Media Capacity (read)	8.5 GB	
	Transport	Tray Loading	

DVD/CD-RW Combo Drive	Dimensions	0.37 x 5.51 x 5.04 in (0.95 x 14.0 x 12.8 cm)	
	Weight	0.45 lb (205 g)	
	Access Times	Random	<120 ms CD
			<155 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		24X CD-RW	3,600 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW	
	Supported Media (write)	CD-R, CD-RW	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	700 MB	
	Transport	Tray loading	

QuickSpecs

Technical Specifications

DVD+/-RW SuperMulti DL Drive	Dimensions	0.37 x 5.51 x 5.04 in (0.95 x 14.0 x 12.8 cm)	
	Weight	0.45 lb (205 g)	
	Access Times	Random	<150 ms CD
			<125 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		10X CD-RW	1,500 KB/s
		4X DVD+R	5,400 KB/s
		2.4X DVD+RW	3,240 KB/s
		4X DVD-R	5,400 KB/s
		2X DVD-RW	2,700 KB/s
		2X DVD-RAM	2,700 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	

Security

HP Fingerprint Sensor	Mobile Voltage Operation	3.0V–3.6V Single Supply
	Operating Temperature	32° – 158°F (0° – 70°C)
	Current Consumption @ 3.3V	Less than 70 mA peak imaging and scrolling Less than 25 mA hardware finger detection Advanced Power Management
	High-Rate Image Capture	Up to 240 image frames /sec
	ESD Resistance	IEC 61000-4-2 Level 4 (±15KV)
	Detection Matrix	192 x 16 Pixels 9.7 mm x 0.81 mm 500 ppi High-Resolution Images

Audio

Technical Specifications

Hardware	Implementation	ADI1981HD High Definition CODEC
	Touch-Sensitive Volume Controls	Volume up, volume down, and mute
	Full Duplex	Yes
	Sound Blaster Pro compatible	Yes
	Microphone In	Stereo
	Headphone/Line Out	Stereo

Integrated Mono Speaker	Power Rating	2 Watts
	Impedance	4 Ohms

Communications

Integrated Intel Gigabit Network Connection (10/100/1000 NIC)	Ethernet Features	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)
		100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)
		1000 Mbit/s operation (1000BASE-T; IEEE 802.3z and 802.3ab; IEEE 802.3 clauses 34-42)
		Auto-Negotiation (Automatic Speed Selection)
		Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
		IEEE 802.1p QoS (Quality of Service) Support
		IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
	Power Management	ACPI compliant – multiple power modes
		Situation-sensitive features reduce power consumption
	Performance Features	TCP/IP/UDP Checksum Offload (configurable)
	Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)
		PXE 2.1 Remote Boot
		Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))
		Comprehensive diagnostic and configuration software suite
		Intel Advanced Management Technology (iAMT)
	Interface	PCI Express x1
	NIC Device Driver Name	Intel 82566MM Gigabit Network Connection
	Drivers Available	Microsoft Windows Vista
		Microsoft Windows XP

QuickSpecs

Technical Specifications

V.92 56K Data/Fax Modem	Form Factor	MDC 1.5 Daughtercard
	Power Management Support	APM Revision 1.2, ACPI
	Approvals/ Certifications	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries
	Data Mode Capabilities	V.92 data
		V.8bis
		V.80
		V44, V.42bis, MNP5 (Compression)
		V.42 (LAPM, MNP2-4) (Error Correction)
		Optional symbol rates: 2800, 3429 Asymmetric Symbol rates
		Synchronous primary channel data signaling rates: 3600, 31200 Automatic rate re-negotiation V.34 V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
	Fax Mode Capabilities	TIA/EIA-578-B (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2
	Command Set	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251

QuickSpecs

HP Compaq 2510p Notebook PC

Technical Specifications

HP ev2210 1xEVDO-A Broadband Wireless Module	Band and Power Class	0 (North American Cellular) – Class III; 1 (North American PCS) – Class II
	Wireless Protocol Standards	CDMA 1x Release A; IS-95A, IS-95B, IS-2000
	Wireless Parametric Standards	Meets or exceeds TIA/EIA IS-98-D
	Interoperability	CDG 22 (TIA/EIA/IS-95-A) CDG 53(TIA/EIA/IS-95-B) C.S0031 (TIA/EIA/IS-2000) CDG 64 (TIA/EIA/IS-2000) C.S0032 (TIA/EIA/IS-866)
	Frequency Band	Dual Band: 800 MHz (Cellular) and 1900 MHz (PCS)
	Data Rates (Packet Mode)	IS-856 rates up to 3.1 Mbps IS-2000 data rates up to 1.8 Mbps
	Maximum Output Power	24dBm (+/-1)
	Power Consumption (maximum)	500mA
	Power Consumption, Sleep Mode	1.7mA – 3.5mA
	Power Management	USB selective suspend CDMA slotted mode sleep and dormant modes
	Antenna Type	High efficiency dual band antennae with spatial diversity, mounted in the display enclosure
	Form Factor	PCI-Express MiniCard
	Weight	0.35 oz (10 g)
	Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 4.5 mm)
	Voltage, Operating	3.3v +/- 10%
	Temperature, Operating (from TIA/EIA/IS-98-D)	-22° to 140° F (–30° to 60° C) (full RF performance) –22° to 167° F (–30° to 75° C) (reduced RF performance)
	Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	–40° to 185° F (–40° to 85° C)
	Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
	Configuration Utilities	Verizon Wireless VZAccess Manager
	LED Activity	LED Off – Radio Off; Solid LED On – Radio On
HP hs2300 HSDPA Broadband Wireless Module	Frequency Bands and Power Class	850/1900/2100MHz WCDMA Power class 3 (+24dBm) 850MHz GSM/GPRS/EDGE 900MHz GSM/GPRS/EDGE, 1800MHz GSM/GPRS/EDGE 1900MHz GSM/GPRS/EDGE EDGE E2 power GPRS/EDGE Multislot Class 12 GPRS PCS/DCS power class 1

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Technical Specifications

		GSM power class 4
Wireless Protocol Standards		GPRS/EDGE: 3GPP R99 GERAN P1 WCDMA Release 5 (R5) High-Speed Downlink Packet Access (HSDPA) 3.6Mbps GSM Phase 2+
Wireless Parametric Standards		Complies with 3GPP specifications
Additional Standards Compliance		FCC parts 15/22/24, CE, Microsoft WHQL, R&TTE directive 1999/5/EC (health, safety, EMC, spectrum), GCF-CC (Module), European Union Directive 2002/95/EC (restrictions of the use of certain Hazardous Substances (RoHS) in electronic equipment), Infrastructure Interoperability Testing (IOT)
Data Rates (Packet Mode)		Designed maximum data rate: EDGE 118 kbps UL / 236 kbps DL UMTS 384 kbps UL / 384 kbps DL HSDPA 384 kbps UL / 3.6 Mbps DL
Chipset and Module		Qualcomm MSM6280 chipset; Sierra Wireless MC8775 module
Maximum Output Power		32 dBm (+/-2) GSM/EDGE GMSK mode
Power Consumption (maximum)		800mA
Power Consumption, Sleep Mode		4 – 8mA
Power Management		USB Selective Suspend sleep and standby mode
Antenna Type		High efficiency 5- band antennae, mounted in the display enclosure
Form Factor		PCI-Express MiniCard
Weight		0.35 oz (10 g)
Dimensions (Length x Width x Thickness)		2.01 x 1.18 x 0.18 in (51 x 30 x 4.5 mm)
Voltage, Operating		3.3v +/- 10%
Temperature, Operating		-22° to 140° F (–30° to 60° C) (full RF performance) –22° to 167° F (–30° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)		–40° to 185° F (–40° to 85° C)
Humidity, Non-operating		85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
LED Activity		LED Off – Radio Off; Solid LED On – Radio On
Configuration Utilities		Varies per country and mobile network operator

Intel PRO/Wireless 3945BG Network Connection	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz

Technical Specifications

Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST, EAP-SIM. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CKK)[2]	15 dBm
Output Power (for OFDM) (power varies by data rate)[2]	15 dBm
Power Consumption	Transmit: 1.8 Watts (max) Receive: 1.4 Watts (max) Idle mode[3]: 150 mW (nominal) Sleep mode: 30 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm
Antenna Connections	2 U.FL type connectors, 50 ohm nominal impedance
Range	802.11 b – Typical (@1 Mbps) 1200 feet – Outdoor Open Area / 300 feet – Indoor, Office environment 802.11 g – Typical (@1 Mbps) 1200 feet – Outdoor Open Area / 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)
Operating Voltage	3.3V +/- 9%, 1.5V +/- 5%
Temperature	Operating 32° to 176° F (0° to 80° C) Non-operating –40° to 176° F (–40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)

Technical Specifications

Configuration Utility[5] Microsoft Windows 2000 or XP
    Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Intel PROSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Intel Wireless WiFi Link 4965AG

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g
Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN)
Frequency Band	2.4 GHz and 5 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES (support for key sizes of 128, 192, and 256 bits), 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows 2000 and XP only.
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CKK)[2]	15 dBm
Output Power (for OFDM, power varies by data rate)[2]	15 dBm

Technical Specifications

Power Consumption	Transmit: 1.6 Watts (average) Receive: 1.1 Watts (average) Idle mode[3]: 30 mW (average) Radio off: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	54 Mbps: -74 dBm, 6 Mbps: -90 dBm
Antenna Connections	2 U.FL type connectors, 50 ohm nominal impedance

Range		
	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment

Form Factor	PCI-Express MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)
Operating Voltage	3.3V +/- 9%, 1.5V +/- 5%

Temperature		
	Operating	32° to 176° F (0° to 80° C)
	Non-operating	–40° to 176° F (–40° to 80° C)

Humidity		
	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 90% (non-condensing)

Altitude		
	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

Configuration Utility[5]　　Microsoft Windows 2000 or XP
　　　　Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Intel PROSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity　　LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Intel Wireless WiFi Link 4965AGN	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n (draft 1.02)
	Interoperability	Wi-Fi certified (802.11abg only)

Technical Specifications

	Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN) Tested with wireless access points from several major manufacturers (details at http://www.hp.com/go/notebooks/WLAN/draft-n)	
Frequency Band	2.4 GHz and 5 GHz	
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n (draft): 66 possible data rates, ranging from 6 Mbps to 300 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n (draft) specification	
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM	
Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES (support for key sizes of 128, 192, and 256 bits), 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows 2000 and XP only.	
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.	
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power (for CKK)[2]	15 dBm	
Output Power (for OFDM) 5 dBm power varies by data rate)[2]		
Power Consumption	Transmit: 2.3 Watts (average, with two spatial streams) Receive: 1.9 Watts (average with three receive chains) Idle mode[3]: 30 mW (average) Radio off: 20 mW (max)	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	300 Mbps: -68 dBm, 54 Mbps: -74 dBm, 6 Mbps: -90 dBm	
Antenna Connections	3 U.FL type connectors, 50 ohm nominal impedance	
Range	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.013 lb (6 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3V +/- 9%, 1.5V +/- 5%	

Technical Specifications

Temperature	Operating	32° to 176° F (0° to 80° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 90% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

Configuration Utility[5]   Microsoft Windows 2000 or XP
  Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Intel PROSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity   LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Broadcom 4311BG 802.11b/g WiFi Adapter

Wireless LAN Standards	IEEE 802.11b IEEE 802.11g
Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN)
Frequency Band	2.4 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CKK)[2]	17.5 dBm

Technical Specifications

Output Power (for OFDM, power varies by data rate)[2]	15 dBm
Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Idle mode[3]: 390 mW (nominal) Sleep mode: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure

Range	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment

Form Factor	PCI-Express MiniCard
Weight	0.026 lb (12 g)
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)
Operating Voltage	3.3v +/- 10%

Temperature	Operating	32° to 176° F (0° to 80° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

Configuration Utility[5]	Microsoft Windows 2000 or XP Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity	LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Broadcom 4311AG 802.11a/b/g WiFi Adapter	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g

Technical Specifications

Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN)
Frequency Band	2.4 GHz and 5 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CKK)[2]	17.5 dBm
Output Power (for OFDM) power varies by data rate)[2]	15 dBm
Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Idle mode[3]: 390 mW (nominal) Sleep mode: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure
Range	802.11 a – Typical (@6 Mbps) 600 feet – Outdoor Open Area / 150 feet – Indoor, Office environment 802.11 b – Typical (@1 Mbps) 1200 feet – Outdoor Open Area / 300 feet – Indoor, Office environment 802.11 g – Typical (@1 Mbps) 1200 feet – Outdoor Open Area / 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard
Weight	0.026 lb (12 g)
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)
Operating Voltage	3.3v +/- 10%
Temperature	Operating 32° to 176° F (0° to 80° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)

QuickSpecs

Technical Specifications

Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

Configuration Utility[5]   Microsoft Windows 2000 or XP
　　　　　　　　　　　　　Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity   LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Broadcom 4321AGN 802.11a/b/g/draft-n WiFi Adapter	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n (draft)
	Interoperability	Wi-Fi certified (802.11abg only) Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN) Tested with wireless access points from several major manufacturers (details at http://www.hp.com/go/notebooks/WLAN/draft-n)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n (draft): 6, 6.5, 9, 12, 13, 13.5, 18, 19.5, 24, 26, 27, 36, 39, 40.5, 48, 52, 54, 58.5, 65, 78, 81, 104, 108, 117, 121.5, 130, 135, 162, 216, 243, 270 Mbps
	Frequency Support	20 MHz: 2.4 GHz and 5 GHz bands 40 MHz: 5 GHz band only
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows 2000 and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.

Technical Specifications

Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CKK)[2]	17 dBm
Output Power (for OFDM) 5 dBm power varies by data rate)[2]	
Power Consumption	Idle associated: 300 mW Idle unassociated: 150 mW Transmit/Receive 20 MHz channel: 2.6 W (max) Transmit/Receive 40 MHz channel: 3.3 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[3]	270 Mbps: -66dBm, 162 Mbps: -72 dBm, 54 Mbps: -72 dBm, 11 Mbps: -85 dBm , 1 Mbps: -94 dBm
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure

Range		
	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment

Form Factor	PCI-Express MiniCard	
Weight	0.026 lb (12 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating Non-operating	14° to 149° F (–10° to 65° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)

Technical Specifications

Configuration Utility[4]	Microsoft Windows 2000 or XP Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity	LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

HP Integrated Module with Bluetooth Wireless Technology	
Bluetooth Specification	2.0 Compliant
Dimensions	1.02 x 0.55 x 0.22 in (26 x 14 x 5.7 mm)
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps
	Synchronous Connection Oriented links up to 3, 64 kbps, voice channels
	Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	-6 dBm to 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -80 dBM at 0.1 % raw bit error rate
Power Consumption	Peak (Tx) 264 mW
	Peak (Rx) 231 mW
	Sleep <1 mW
Antenna	Internally integrated within module
Range	Up 33 ft (10 m)
Electrical Interface	USB 2.0 compliant
	Microsoft Windows Plug and Play compliant
OS Support	Genuine Windows Vista
	Genuine Windows XP
	Genuine Windows 2000
Bluetooth Software Supported	Broadcom Bluetooth for Windows
	Microsoft Windows XP Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support
	Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff

Technical Specifications

Certifications	All necessary regulatory approvals for supported countries, including:	
	FCC (47 CFR) Part 15C, Section 15.247 & 15.249	
	ETS 300 328, ETS 300 826	
	Low Voltage Directive IEC950	
	UL, CSA, and CE Mark	
Temperature	Operating	-4° to 158° F (-20° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90%
	Non-operating	5% to 95%
Altitude	Operating	15,000 ft (4,572 m)
	Non-operating	40,000 ft (12,192 m)
Bluetooth Profiles Supported	(with Bluetooth for Windows 4.0 software)	
	Serial Port Profile (SPP)*	
	Dial-Up Networking (DUN)*	
	Generic Object Exchange Profile (GOEP)	
	Object Push Profile (OPP)*	
	File Transfer Profile (FTP)	
	Synchronization Profile (SYNC)	
	Hard Copy Cable Replacement (HCRP)*	
	Personal Area Networking Profile (PAN)*	
	Human Interface Device Profile (HID)*	
	FAX Profile (FAX)	
	Basic Imaging Profile (BIP)	
	Headset Profile (HSP)	
	Hands Free Profile (HFP)	
	Advanced Audio Distribution Profile (A2DP)	

* indicates the profile is also supported by Microsoft Windows XP SP2

Environmental Data	Eco-Label Certifications	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- ENERGY STAR 4.0
- US Federal Energy Management Program (FEMP)
- Taiwan Green Mark
- China Energy Conservation Program (CECP)
- ECO declaration
- Korean Eco Label
- EPEAT Silver Rating

System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data is based on a "Typically Configured Notebook"

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	8.8 W	8.7 W	9.4 W
Sleep (Energy Star low power mode)	1.1 W	0.67 W	1 W
Off	1 W	0.56 W	1 W
Heat Dissipation*	115 VAC	230 VAC	100 VAC

Technical Specifications

Normal Operation	30.025 BTU/hr	29.684 BTU/hr	32.072 BTU/hr
Sleep	3.753 BTU/hr	2.286 BTU/hr	3.412 BTU/hr
Off	3.412 BTU/hr	1.91 BTU/hr	3.412 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.43	17.8
Operating mode (HDD)	2.96	22.4

Batteries This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000 ppm by weight.

The battery type and chemistry used in the product is:
CR2032 (coin cell), Lithium
3, 6, or 9 cell rechargeable Lithium-Ion battery

Additional information: This product is in compliance with the EU Restrictions of Hazardous Substances (RoHS) Directive – 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.

Keyboard complies with ISO standard: ISO 9995, EN 29241-4, and ISO/IEC 15412

Input devices of this product comply with ISO 9241, part 9.

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% recycled materials (by wt.)

This product is greater than 92% recyclable when properly disposed of at end of life.

Packaging Materials

- External:
  - Corrugated / Paper – 1.0 lb (453 g)
- Internal:
  - EPE Foam – 0.15 lb (70 g)

Technical Specifications

- ○ LDPE Bag – 0.01 lb (5 g)
- The corrugated paper packaging materials contains at least 40% recycled content.

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment (http://www.hp.com/hpinfo/globalcitizenship/ environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

End-of-life Management and Recycling

HP offers our customers several other options for handling their aging computers while also minimizing the impact on the environment—including product trade-in and leasing services-in addition to recycling services.

Technical Specifications

Please go to: http://www.hp.com/recycle
or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Environment website http://www.hp.com/environment Eco-label certifications http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html